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ABSTRACT

This paper reports the development of a Classroom Behavior Inventory and a series of studies which have developed and refined methods for collecting teacher ratings of children's social, emotional and task-oriented behavior from preschool through high school. Findings suggest that the Classroom Behavior Inventory is a relatively economical, reliable, and valid method for collecting data on classroom behavior. The Inventory should be of use in research on adjustment and achievement. The development of a conceptual model for classroom behavior allows integration of many studies in the field of clinical psychology and personality research and provides a guide for sampling the domain of child adaptation to the classroom. (GO)

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Major Replicated Dimensions of Adjustment and Achievement: Cross-cultural, Cross-sectional and Longitudinal Research

Earl S. Schaefer

Symposium on

Dimensions of Competence in Classrooms

J. Michael O'Malley, Chairman

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The development of a Classroom Behavior Inventory and of a conceptual model for classroom behavior will be summarized in the following discussion. In addition, findings from a short form which defines three bipolar dimensions of classroom behavior will be presented. A series of studies has developed and refined methods for collecting teacher ratings of children's social, emotional, and task-oriented behavior from infancy through high school. The findings of this study suggest that the Classroom Behavior Inventory is a feasible, economical, reliable and valid method for collecting data on classroom behavior which is useful in cross-sectional and longitudinal research on adjustment and achievement. The conceptual model integrates many of the studies in the field of clinical psychology and personality research and provides a guide for sampling the domain of child adaptation to the classroom.

I. Development of the Classroom Behavior Inventory

The initial development of the Classroom Behavior Inventory by Schaefer, Droppleman, and Kalverboer (1965) was guided by Schaefer's (1961) circumplex model for child behavior which has been replicated and elaborated by Becker and Krug (1964) and Baumrind and Black (1967). Seventeen five-to-ten item scales were developed with a median internal consistency reliability of .81. A factor analysis replicated the two-dimensional circumplex model of child behavior with major dimensions of Love versus Hostility and Extraversion versus Introversion. The American scales were adapted and additional scales were developed which were designed to measure distractible behavior in the Netherlands. A factor analysis of the Netherlands data replicated the dimension of Extraversion versus Introversion, but also differentiated scales defining a cluster of Hostility from scales defining a cluster of Distractibility.

The three dimensions of Extraversion versus Introversion, Love versus Hostility, and Task-Orientation versus Distractibility were sampled and additional scales were added in a subsequent American version of the Classroom Behavior Inventory developed by Schaefer, Aaronson, and Burgoon (1965). Sixty-four five-item scales were developed with mean internal consistency reliabilities of .86. A factor analysis and varimax rotation of the 64 scales replicated the three major factors. Scales which have defined these factors in various studies are summarized here from Schaefer (1971).

1. Task Orientation. Perseverance, Conscientiousness, Attentiveness, Concentration, Methodicalness, Academic Seriousness, Achievement Orientation. The opposite pole typically shows loadings on Distractibility, Hyperactivity, and Inappropriate Talkativeness.

2. Hostility. Cruelty, Irritability, Resentfulness, Quarrelsomeness, Hostile Dominance, Covert Hostility, Suspiciousness, and Argumentativeness. Considerateness has the highest loadings on the opposite pole, but Kindness has higher loadings on Extraversion.

3. Extraversion versus Introversion. Verbal Expressiveness, Gregariousness, Friendliness to Teacher, Cheerfulness versus Depression, Social Withdrawal, Submissiveness, Emotional Passivity and Selfconsiousness.

The development and factor analysis of the 64-scale version of the Classroom Behavior Inventory has led to the development by Schaefer and Aaronson of other versions for other age groups and for other situations. These include an Infant Behavior Inventory and a Day Care Behavior Inventory. Several short forms were developed including a sixty-item, twelve-scale form for preschool and primary grades. Factor analyses of that version for large samples have repeatedly replicated

the three major bipolar dimensions. Extraversion is best defined by Gregariousness and Verbal Expressiveness, Hostility by Irritability and Resentfulness, and Task-Orientation by Perseverance and Concentration.

From the factor analytic data, Schaefer, Aaronson, and Small (1970) then developed a unipolar short form which consisted of five items for Task-Orientation, five items for Extraversion, and five items for Hostility. Independent factor analyses for each grade level from Kindergarden through Fifth Grade clearly replicated the three dimensions. Since that version only defined one pole of each of the bipolar factors, Schaefer and Aaronson developed an eighteen-item bipolar version with three items for each pole of the bipolar factors of Extraversion versus Introversion, Love or Considerateness versus Hostility, and Task-Orientation versus Distractibility. The analyses of the eighteen-item bipolar short form reported here suggest that much of the information from the 64-scale, 320-item form can be obtained from 18 items. The short bipolar form makes it possible for a teacher to rate an entire class of approximately 30 children on three major dimensions of classroom behavior in one hour. It is, therefore, feasible to conduct large sample cross-sectional and longitudinal studies with this form.

II. Development of configurational and hierarchial models for class adaptation.

The development of the initial form of the Classroom Behavior Inventory was guided by a two-dimensional circumplex model for child behavior. This model was derived by Schaefer (1961) from earlier studies of child behavior by McDonough (1929) and Richards and Simons (1941). The two major dimensions of social behavior--Extraversion versus Introversion and Love versus Hostility--have been repeatedly replicated. A review of the literature suggests that many of the statistical studies of social and

emotional behavior can be integrated by the circumplex model. In addition, the circumplex organization of social-adjustment concepts from Schaefer (in press) shows that much of the research in personality and clinical psychology can be integrated by a two-dimensional model (Figure 1).

Perhaps the failure to sample the dimension of Task-Orientation in many earlier studies can be explained by a narrow focus on social and emotional behavior and on social adjustment. However, a broader focus which includes the child's performance on tasks has repeatedly isolated factors similar to Task-Orientation. These factors include Autonomous Achievement Striving (Beller, 1959), Interest in School Work (Werderlin, 1966), Industriousness (Digman, 1972), and Task-Avoidance versus Need Achievement (Miller, 1972).

Several studies suggest that Task-Orientation is highly related to academic achievement. Digman (1972) found that the sum of four ratings of Industriousness between grades 1 and 9 correlated .70 with grade point average in senior high school. Victor Small (Personal Communication) has reported that ratings of Task-Orientation with the five-item unipolar form of the CBI at the end of first grade correlate .61 with reading score at the end of second grade. Using a version of the Classroom Behavior Inventory, Kohn and Rosman (1974) report that teacher's ratings of Task-Orientation in kindergarten correlate .44 with reading score at the end of second grade. Thus, Task-Orientation appears to be a major component of academic competence and achievement.

Although the three dimensions of Task-Orientation versus Distractibility, Extraversion versus Introversion and Love versus Hostility generate a spherical model for classroom behavior, it is difficult to plot that space. To communicate a four-dimensional model for classroom adaptation, which includes Intelligence, Task-Orientation versus Distractibility, Love

Figure I

A CIRCUMPLEX ORGANIZATION OF SOCIAL ADJUSTMENT CONCEPTS

	360°/0°	45°	90°	135°	180°	225°	270°	315°
Ackerson (1942)						personality problems		conduct problems
Hewitt and Jenkins (1946)						over-inhibition		unsocialized aggression
Eysenck (1953)	extraversion				introversion		neurosis	
Kassebaum, Couch, and Slater (1959)	extraversion	social participation	ego-strength	intellectual control	introversion	withdrawal	ego-weakness	impulsivity
Peterson (1960)	extraversion		adjustment		introversion		mal-adjustment	
Peterson (1961)						personality problems		conduct problems
Schaefer (1961)	extraversion	friendliness	love	conformity	introversion	withdrawal	hostility	aggressive-ness
Collins and Maxwell (1962)						anxiety		rebellious-ness
Digman (1963)	extraversion		good socialization		introversion		poor socialization	
Becker and Krug (1964)	extraversion	loving	emotional stability	submissive	introversion	distrusting	emotional instability	assertive
Baumrind and Black (1967)	active	stable	respon-sible	conformity	passive	unstable	irrespon-sible	non-conformity
Achenbach (1966)	externali-zation				internali-zation		severe and diffuse pathology	
Rutter (1969)						neurotic		antisocial
Kohn and Rosman (1972)		interest-participation		cooperation-compliance		apathy-withdrawal		anger-defiance
Quay (1973)						withdrawal		aggression

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versus Hostility, and Extraversion versus Introversion, a hierarchial model for classroom behavior was developed which is reproduced in Figure 2. The child's adaptation to the classroom is divided into an area of Competence which includes Task-Orientation and Intelligence and an area of Adjustment which includes Extraversion versus Introversion and Love versus Hostility. Of course, the scales which define those factors and the items which define the scales give a more detailed analysis of this domain of classroom adaptation.

III. Analyses of the Bipolar Short Form of the Classroom Behavior Inventory

The factor analysis of teacher ratings of 564 children from Grades K-6 on the 18-item bipolar form of the CBI is reported in Table 1. Factor I has loadings which vary from .65 to .86 for all items defining Hostility and Considerateness. Factor II has loadings which vary from .74 to .82 for all items defining Task-Orientation and Distractibility and Factor III has loadings which vary from .73 to .77 for all items defining Extraversion and Introversion. Although Extraversion and Introversion items have few loadings on the other two factors, many of the items which define each of the other two factors also have loadings on the other factor. Despite the isolation of three major factors, a simple sum of the three items which defines each pole of these three bipolar factors will produce correlations among scale scores.

Ratings were collected with either the unipolar short form or the bipolar short form of the CBI for an elementary school population during the spring of 1972 and with the bipolar short form in the springs of 1973 and 1974 and the fall of 1974. The school populations during 1973 included 28 percent black students and a great range in socio-economic status and ability level among the students. However, separate analysis of the CBI data for blacks and whites showed variability in behavior within both

FIGURE II

A hierarchical model for adaptation

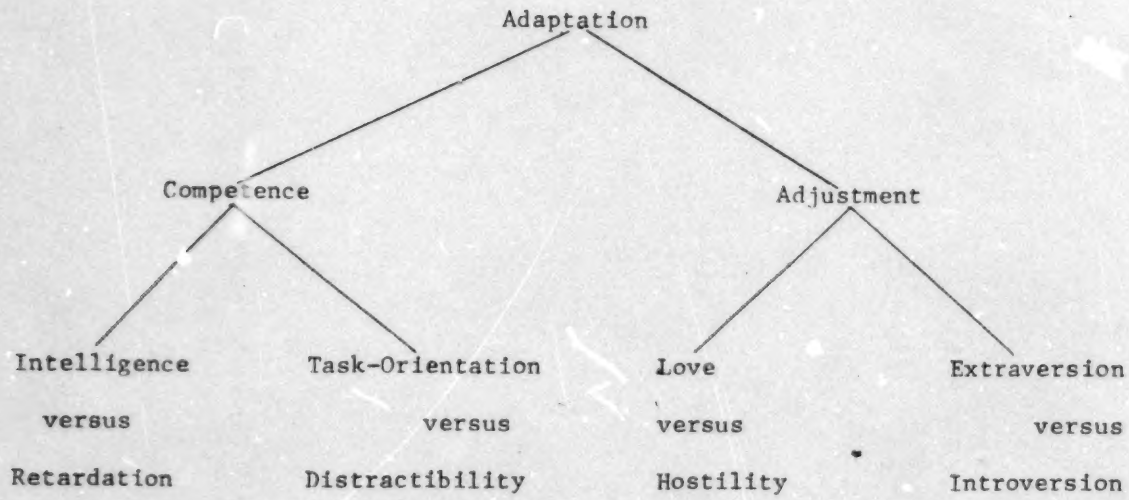

Table 1

Factor Analysis of the Classroom Behavior Inventory

Short Form

N = 564

Grades K-6

Concept	Item No.	Factor Loadings I	II	III
Hostility	5	79	-32	03
	11	86	-20	03
	16	81	-26	04
Considerateness	6	-65	40	03
	13	-75	26	-03
	15	-75	26	-04
Task-Oriented Behavior	2	-27	82	-16
	10	-31	74	-25
	18	-31	82	-19
Distractibility	4	36	-79	08
	9	43	-74	06
	14	29	-75	26
Extroversion	1	-20	01	-77
	8	05	22	-74
	12	07	07	-77
Introversion	3	-05	-24	74
	7	23	02	75
	17	11	-24	73

racial groups. Reliability studies for three teachers rating the same children in open classrooms, year-to-year correlations, correlations between the spring of 1972 and the fall of 1974, and correlations between the six CBI scales and the Iowa Test of Basic Skills have been computed for this report. Although the extensive findings cannot be reported fully here, major findings will be presented briefly.

Inter-rater reliabilities of the three-item scales of the short bipolar form of the CBI were computed from ratings by each of the three teachers in open classrooms who rated 82 to 85 children in fourth, fifth, and sixth grade classrooms. The correlations between the ratings of each pair of teachers are reported in Table 2. The median correlations range from .68 for Hostility, and .66 for Task-Orientation, .64 for Distractibility, .53 for Extraversion, .50 for Considerateness, to .42 for Introversion. Raters do not vary greatly in their agreement with each other as shown by median correlations among pairs of raters. Combining the ratings of three teachers would increase the reliabilities of these descriptions and provide more accurate estimates of child behavior. Despite the fact that teachers in open classrooms probably do not know all of the children well, these reliabilities were judged to be satisfactory for research, but not for individual prediction.

Correlations between different teachers rating children in different self-contained classrooms during different years are reported in Table 3. The sample consists of 92 children in Grades 1 through 3 who were rated both during the spring of 1972 and the spring of 1973. These year-to-year correlations are not much lower than the inter-rater correlations during the same year with a range from .70 for Distractibility, .62 for Hostility, .57 for both Task-Orientation and Considerateness, .44 for Extraversion and .34 for Introversion. The factor of Extraversion versus

Table 2

Interrater Reliabilities of Classroom Behavior Inventory

	Scales in Open Classrooms									
	Grade 4 N=85			Grade 5 N=85			Grade 6 N=82			Median
Scales \ Teachers	1+2	2+3	1+3	1+2	2+3	1+3	1+2	2+3	1+3	
Extraversion	57*	49	35	60	53	57	57	43	42	53
Introversion	32	38	33	69	42	29	46	32	48	42
Task-Orientation	56	66	59	75	62	72	64	67	78	66
Distractibility	64	68	61	73	46	57	54	52	66	64
Hostility	64	68	59	68	56	56	71	76	82	68
Considerateness	47	60	50	63	45	48	50	60	70	50
Median	56	63	54	68	51	56	56	56	68	

Table 3

Intercorrelations of Classroom Behavior Inventory Scales between Spring 1972 and Spring 1973 for Grades 1 to 3 N=92

	1973 Ratings					
1972 Ratings	Extrav.	Introv.	Task-Or.	Distract.	Consider.	Hostility
Extraversion	44*	-45	30	-31	17	-17
Introversion	-31	34	-29	34	-17	15
Task-Orientation	22	-26	57	-60	51	-43
Distractibility	-30	33	-65	70	-53	47
Considerateness	-01	-07	46	-44	57	-56
Hostility	-13	21	-44	38	-60	62

*Decimal points omitted

Introversion shows the lowest year-to-year correlation, while the correlations for the bipolar factors of Task-Orientation versus Distractibility and Considerateness versus Hostility are relatively good.

The analysis of the stability of these ratings of classroom behavior in Table 4 was continued by correlating ratings for the spring of 1972 with ratings for the fall of 1974 for a sample of 76 children who had been rated during the springs of 1972, 1973, and 1974 and the fall of 1974. The factor of Task-Orientation versus Distractibility shows the highest stability with correlations of .52 and .54. The factor of Considerateness versus Hostility is next highest with correlations of .49 and .49, and Extraversion versus Introversion is lowest with correlations os .42 and .45. Although these correlations tend to be lower than the year-to-year correlations, the behavior ratings are sufficiently stable for research on classroom behavior.

To contribute to the analysis of the correlations of classroom behavior with academic achievement, the correlations of the CBI scales with the Total Score on the Iowa Test of Basic Skills are also reported in Table 4 for 72 children. The factor of Task-Orientation versus Distractibility is most clearly correlated with academic achievement with individual scales for the two years showing correlations of .64, .56, -.56 and -.50. Despite the substantial correlations between ratings for scales defining the factors of Task-Orientation versus Distractibility and Considerateness versus Hostility (.48, .48, .66, and .42) the correlations of the scales for Considerateness versus Hostility with the Iowa Test of Basic Skills Total Score are only .18, .34, -.11 and -.16. The relatively unstable scores for Extraversion versus Introversion correlate with the Iowa .33, .39, -.31, and -.21.

Table 4

Stability, Intercorrelations and Correlations with Iowa Test of Basic Skills of Classroom Behavior Inventory Scales for Spring 1972 and Fall 1974

N = 76 for CBI Scales and 72 for Iowa Test of Basic Skills

Year	Scale		1972 E	1972 T	1972 C	1972 I	1972 D	1972 H	1974 E	1974 T	1974 C	1974 I	1974 D	1974 H
1972	Extraversion	E	-											
1972	Task-Orientation	T	23*	-										
1972	Considerateness	C	-07	48	-									
1972	Introversion	I	-78	-32	-01	-								
1972	Distractibility	D	-15	-83	-61	29	-							
1972	Hostility	H	-06	-31	-69	10	48	-						
1974	Extroversion.....	E	42	31	-06	-41	-24	07	-					
1974	Task-Orientation	T	18	52	33	-18	-55	-23	31	-				
1974	Considerateness	C	-02	41	49	00	-49	-39	26	66	-			
1974	Introversion	I	-38	-39	-02	45	26	07	-76	-28	-18	-		
1974	Distractibility	D	-08	-50	-44	06	54	32	-15	-75	-49	19	-	
1974	Hostility	H	06	-26	-46	-12	35	49	-08	-43	-73	10	42	-
	Iowa Test of Basic Skills		33	64	18	-31	-56	-11	39	56	34	-21	-50	-16

*Decimal points omitted.

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The correlations of the unweighted sums of the four ratings during the period from the spring of 1972 through the fall of 1974 with the Iowa Test of Basic Skills Total Score for the 72 subjects who were rated every year were: Task-Orientation, .73; Distractibility, -.66; Considerateness, .40; Hostility, -.26; Extraversion, .49; and Introversion, -.38. Thus, these brief classroom behavior ratings yield substantial correlations with academic achievement.

Summary: The data presented on the short bipolar form of the Classroom Behavior Inventory suggest that the method and the four-dimensional model for classroom adaptation of Intelligence, Task-Orientation, Extraversion, and Considerateness will contribute to future cross-sectional and longitudinal studies of child competence and adjustment. The relatively economical, reliable, and valid data of the CBI facilitate research on the social, emotional, and task-oriented behaviors which contribute to child adaptation. Future research should further explore the development, the stability, the antecedents and the correlates of these major dimensions of child behavior.

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CLASSROOM BEHAVIOR INVENTORY
Short Form, K-12
Earl S. Schaefer and May Aaronson

Student's Name _____ Date _____

Age _____ Grade _____ School _____

Subject _____ Teacher _____

INSTRUCTIONS

Please describe as accurately as possible how the above student behaves in your classroom by circling one of the four responses to each question. Give a response to every item and BASE YOUR RESPONSE UPON YOUR PERSONAL OBSERVATION AND EXPERIENCE. Please do not confer with anyone about the student before completing this form.

	Very Much Like	Some-What Like	Very Little Like	Not at All Like
1. Laughs and smiles easily and spontaneously in class.	4	3	2	1
2. Works earnestly at his classwork; doesn't take it lightly.	4	3	2	1
3. Has a low, unsteady or uncertain voice when speaking to teacher or a group of classmates.	4	3	2	1
4. Is quickly distracted by events in or outside the classroom.	4	3	2	1
5. Tries to get even with child with whom he is angry.	4	3	2	1
6. Awaits his turn willingly.	4	3	2	1
7. Is usually sad, solemn and serious looking.	4	3	2	1
8. Likes to express his ideas and views.	4	3	2	1
9. Sometimes pays attention; other times must be spoken to constantly.	4	3	2	1

*Pre-standardization copy. Not for use of quotation without consent of authors. Short form developed from item, scale and factor analyses of long forms.

CBI- Con'd.

		Very Much Like	Some-What Like	Very Little Like	Not at All Like
10.	Watches carefully when teacher or a classmate is showing how to do something.	4	3	2	1
11.	Gets angry quickly when others do not agree with his opinion.	4	3	2	1
12.	Does not wait for others to approach him, but seeks out others.	4	3	2	1
13.	Tries not to do or say anything which would hurt others.	4	3	2	1
14.	Often cannot answer a question, because his mind has wandered.	4	3	2	1
15.	Gives the other an opportunity to express his point of view.	4	3	2	1
16.	Ridicules and mocks others without regard for their feelings.	4	3	2	1
17.	Tends to withdraw and isolate himself, even when he is supposed to be working with a group.	4	3	2	1
18.	Sticks with a job until it's finished, even if it is difficult for him.	4	3	2	1